CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 78-44

NPDES NO. CA 0037699

WASTE DISCHARGE REQUIREMENTS FOR:

VALLEJO SANITATION AND FLOOD CONTROL DISTRICT
SOLANO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. Vallejo Sanitation and Flood Control District, hereinafter discharger, submitted a report of waste discharge dated April 28, 1978, for reissuance of NPDES Permit No. CA 0037699.

2. The discharger presently discharges 7.33 mgd average flow from its physical-chemical treatment plant which has a dry weather design flow of 12.5 mgd. This plant treats domestic and industrial wastewater from the Vallejo area including Mare Island Naval Shipyard. The treated wastewater is discharged into Carquinez Strait, a water of the United States, west of the Carquinez Bridge through a submerged diffuser about 64 feet below mean lower low water (001).

3. On August 20, 1974, the Board issued Order No. 74-86 prescribing requirements for the discharge. This Order was modified by Order No. 75-78 on November 18, 1975, and Order No. 77-112 on September 20, 1977. This last Order required completion of construction on the new secondary treatment facilities by January 1, 1978. The facilities were not completed due to start-up problems with the dual-media filter and the carbon dioxide generation furnace. The filter has since been completed and tested, but the carbon dioxide generation furnace will not become operational until July 1, 1978.

4. A Water Quality Control Plan for the San Francisco Bay Basin was adopted by the Board in April 1975. The Basin Plan contains water quality objectives for Carquinez Strait.

5. The beneficial uses of Carquinez Strait and contiguous water bodies are:

   a. Recreation
   b. Esthetic enjoyment
   c. Preservation and enhancement of fish, wildlife and other aquatic resources
   d. Industrial water supply
   e. Navigation
   f. Fishing

6. This project involves the continued operation of a publicly-owned facility to provide sewerage service with negligible or no expansion of use beyond that previously existing. Consequently, this project will not have a significant effect on the environment based upon the exemption provided in Section 15101, Title 14, California Administrative Code.

7. Effluent limitations, toxic and pretreatment effluent standards established pursuant to Section 208(b), 301, 304, and 307 of the Federal Water Pollution Control Act are applicable to the discharge.

8. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the proposed discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

9. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, that Vallejo Sanitation and Flood Control District in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Federal Water Pollution Control Act, and regulations and guidelines adopted thereunder shall comply with the following:

A. Effluent Limitations

1. The discharge of Waste 001 in excess of the following limits is prohibited:

Constituents	Units	7-Day Average	30-Day[1/] Average	Maximum Daily[2/]	Instantaneous Maximum
a. Settleable Matter	ml/l-hr	-	0.1	-	0.2
b. BOD	mg/l	45	30	60	-
	lbs/day	-	4260	17,000	-
	kg/day	-	1930	7,720	-
c. Suspended Solids	mg/l	45	30	60	-
	lbs/day	-	4260	17,000	-
	kg/day	-	1930	7,720	-
d. Oil & Grease	mg/l	-	10	20	-
	lbs/day	-	1420	5,680	-
	kg/day	-	650	2,580	-
e. Chlorine Residual	mg/l	-	-	-	0.0

1/Mass emission rates based on a maximum monthly flow of 17 mgd.
2/Mass emission rates based on a maximum daily flow of 34 mgd.

2. The arithmetic mean of the biochemical oxygen demand (5-day, 20°C) and suspended solids values, by weight, for effluent samples collected in a period of 30 consecutive calendar days shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected approximately the same times during the same period (85 percent removal).

3. The pH of the discharge shall not exceed 9.0 nor be less than 6.0.

4. In any representative set of samples from the treatment plants before dilution, the waste as discharged shall meet the following limit of quality:

TOXICITY:

The survival of test organisms acceptable to the Board in 96-hour bioassays of the effluent shall achieve a 90 percentile value of not less than 50% survival.

5. Representative samples of the effluent shall not exceed the following limits more than the percentage indicated: (1)

Constituent	Unit of Measurement	50% of time	10% of time
Arsenic	mg/l (kg/day)	0.01 (.47)	0.02 (.95)
Cadmium	mg/l (kg/day)	0.02 (.95)	0.03 (1.42)
Total Chromium	mg/l (kg/day)	0.005(.24)	0.01 (.47)
Copper	mg/l (kg/day)	0.2 (9.5)	0.3 (14.2)
Lead	mg/l (kg/day)	0.1 (4.7)	0.2 (9.5)
Mercury	mg/l (kg/day)	0.001 (.047)	0.002 (.095)
Nickel	mg/l (kg/day)	0.1 (4.7)	0.2 (9.5)
Silver	mg/l (kg/day)	0.02 (.95)	0.04 (1.89)
Zinc	mg/l (kg/day)	0.3 (14.2)	0.5 (23.7)
Cyanide	mg/l (kg/day)	0.1 (4.7)	0.2 (9.5)
Phenolic Compounds	mg/l (kg/day)	0.5 (23.7)	1.0 (47.3)
Total Identifiable Chlorinated Hydrocarbons (2)	mg/l (kg/day)	0.002 (.095)	0.004 (0.189)

(1) These limits are intended to be achieved through secondary treatment, source control and application of pretreatment standards.

(2) Total Identifiable Chlorinated Hydrocarbons shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, polychlorinated biphenyls, and other identifiable chlorinated hydrocarbons.

6. The median value for the MPN of total coliform in any five (5) consecutive effluent samples shall not exceed 240 coliform organisms per 100 milliliters. Any single sample shall not exceed 10,000 MPN/100 ml when verified by a repeat sample taken within 48 hours.

B. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

b. Bottom deposits or aquatic growths;

c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

d. Visible, floating, suspended or deposited oil or other products or petroleum origin;

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a.	Dissolved Oxygen	5.0 mg/l minimum. Annual Median - 80% saturation. When natural factors cause lesser concentration(s) than those specified above, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
b.	Dissolved sulfide	0.1 mg/l maximum
c.	pH	Variation from natural ambient pH by more than 0.2 pH units.
d.	Un-ionized ammonia	0.025 mg/l as N Annual Median 0.4 mg/l as N Maximum

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder.

C. Discharge Prohibitions

1. There shall be no bypass or overflow of untreated waste water to waters of the State, either at the treatment plant or from the collection system.

2. The average dry weather flow shall not exceed 12.5 mgd. Average shall be determined over three consecutive months each year.

3. Discharge at any point at which the wastewater does not receive an initial dilution of at least 10:1 is prohibited.

D. Provisions

1. The discharger shall have and enforce a source control program approved by the Executive Officer which contains at least the powers and authorities contained in the State Water Resources Control Board's "Guidelines for Determining the Effectiveness of Local Source Control Program."

   This Regional Board will consider amendment of the Effluent Limitation A.5., if the discharger demonstrates that compliance cannot be achieved through a program acceptable to the Board for source control and pretreatment standards.

2. This Board's Order Nos. 74-86, 75-78, and 77-112 are hereby rescinded.

3. The discharger shall comply with all directives of this Order by October 1, 1978.

4. The discharger shall review and update annually its contingency plan as required by Board Resolution No. 74-10. The discharge of pollutants in violation of this Order where the discharger has failed to develop and/or implement a contingency plan will be basis for considering such discharge a willfull and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

5. The discharger shall comply with the Self-Monitoring and Reporting Program as ordered by the Executive Officer.

6. The discharger shall comply with all items of the attached "Standard Provisions and Reporting Requirements," dated April 1977.

7. This Order expires June 20, 1983. The discharger must file a report of waste discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

8. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Federal Water Pollution Control Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on June 20, 1978.

Attachments:
Standard Provisions &
Reporting Requirements, April 1977
Self-Monitoring Program

FRED H. DIERKER
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
APRIL 1977

STANDARD PROVISIONS, REPORTING REQUIREMENTS AND DEFINITIONS

A. Standard Provisions:

1. Neither the treatment nor the discharge of wastes shall create a nuisance or pollution as defined in the California Water Code.

2. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from his liabilities under federal, state, or local laws, nor guarantee the discharger a capacity right in the receiving waters.

3. The discharger shall permit the Regional Board and the Environmental Protection Agency:

   (a) Entry upon premises in which an effluent source is located or in which any required records are kept;

   (b) Access to copy any records required to be kept under terms and conditions of this Order;

   (c) Inspection of monitoring equipment or records, and

   (d) Sampling of any discharge.

4. All dischargers authorized by this Order shall be consistent with the terms and conditions of this Order. The discharge of any pollutant more frequently than or at a level in excess of that identified and authorized by this Order shall constitute a violation of the terms and conditions of this Order.

5. The discharger's wastewater treatment plant shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Chapter 3, Subchapter 14, Title 23, California Administrative Code.

6. The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed by the discharger to achieve compliance with the waste discharge requirements.

7. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of at a legal point of disposal, and in accordance with the provisions of Division 7.5 of the California Water Code. For the purpose of this requirement, a legal point of disposal is defined as one for which waste discharge requirements have been prescribed by a regional water quality control Board and which is in full compliance therewith.

b) Should the Regional Board not approve the existing safeguards, the discharger shall, within ninety (90) days of having been advised by the Regional Boad that the existing safeguards are inadequate, provide to the Regional Board and the Regional Administrator a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the permittee shall comply with the terms and conditions of this permit. The schedule of compliance shall, upon approval of the Regional Board Executive Officer, become a condition of this Order.

13. Any diversion from or bypass of facilities necessary to maintain compliance with the terms and conditions of this Order is prohibited, except (a) where unavoidable to prevent loss of life or severe property damage, or (b) where excessive storm drainage or runoff would damage any facilities necessary for complaince. Wet weather diversions and bypasses may be subject to waste discharge requirements.

The discharger shall take all reasonable steps to minimize any adverse impact to receiving waters resulting from noncompliance with any effluent limitations or prohibition specified in this Order, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

Details of notification procedures, required written reports and accelerated monitoring are contained in the Self-Monitoring Program.

14. Except for data determined to be confidential under Section 308 of the Federal Water Pollution Control Act, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Regional Water Quality Control Board, and the Regional Administrator of EPA. As required by the Federal Water Pollution Control Act, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act.

15. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to this Board.

16. The discharger shall ensure compliance with any existing or future pretreatment standard promulgated by EPA under Sections 307 of the Federal Water Pollution Control Act or amendment thereto, for any discharge to the municipal system.

17. The discharge of any radiological, chemical, or biological warfare agent or high level radiological waste is prohibited.

5. The discharger shall file a written report with the Board within ninety (90) days after the average dry-weather waste flow for any month equals or exceeds 75 percent of the design capacity of his waste treatment and/or disposal facilities. The discharger's senior administrative officer shall sign a letter which transmits that report and certifies that the policy-making body is adequately informed about it. The report shall include:

   a. Average daily flow for the month, the date on which the instantaneous peak flow occurred, the rate of that peak flow, and the total flow for the day.

   b. The discharger's best estimate of when the average daily dry-weather flow rate will equal or exceed the design capacity of his facilities.

   c. The discharger's intended schedule for studies, design, and other steps needed to provide additional capacity for his waste treatment and/or disposal facilities before the waste flow rate equals the capacity of present units. (Reference: Sections 13260, 13267(b) and 13268, California Water Code).

C. Definitions:

1. The daily discharge rate is obtained from the following calculation for any calendar day:

$$\text{Daily discharge rate (lbs/day)} = \frac{8.34}{N} \sum_{1}^{N} Q_i C_i$$

$$\text{Daily discharge rate (kg/day)} = \frac{3.78}{N} \sum_{1}^{N} Q_i C_i$$

in which N is the number of samples analyzed in any calendar day. Q_i and C_i are the flow rate (MGD) and the constituent concentration (mg/l) respectively, which are associated with each of the N grab samples which may be taken in any calendar day. If a composite sample is taken, C_i is the concentration measured in the composite sample and Q_i is the average flow rate occurring during the period over which samples are composited.

2. The "30-day, or 7-day, average" discharge is the total discharge by weight during a 30, or 7, consecutive calendar day period, respectively, divided by the number of days in the period that the facility was discharging. Where less than daily sampling is required by this permit, the 30-day, or 7-day, average discharge shall be determined by the summation of all the measured discharges by weight divided by the number of days during the 30, or 7, consecutive calendar day period when the measurements were made.

   If fewer than four measurements are made during a 30-day period or fewer than three during a 7-day period, then compliance or non-compliance with the 30, or 7, day average discharge limitation shall not be determined.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

Vallejo Sanitation and Flood Control District

Solano County

NPDES NO. CA 0037699

ORDER NO. 78-44

CONSISTS OF

PART A, dated January 1978

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT AND INTAKE

Station	Description
A-001	At any point in the treatment facilities headworks at which all waste tributary to the system is present and preceding any phase of treatment.

B. EFFLUENT

Station	Description
E-001	At any point in the outfall containing Waste 001 between the point of discharge and the point at which all treatment has been completed and all waste tributary to that outfall is present.
E-001-D	At any point in the disinfection facilities for Waste 001 at which point adequate contact with the disinfectant is assured. (May be the same as E-001.)

C. RECEIVING WATERS

Station	Description
C-1	In Carquinez Strait, the area about 200 feet square and centered above the diffuser section of the outfall sewer.
C-2	At any point located in C-1.
C-R	At any point in Carquinez Strait, 2000 feet up-current from discharge.

D. LAND OBSERVATIONS

Station	Description
P-1 thru P-'n'	Located at the corners and midpoints of the perimeter fenceline surrounding the treatment facilities. (A sketch showing the locations of these stations will accompany each report.)
L-1 thru L-'n'	Located along the perimeter levee at equidistant intervals not to exceed 100 feet. (A sketch showing the locations of these stations will accompany each report.)

E. OVERFLOWS AND BYPASSES

Station	Description
0-1 thru 0-'n'	Bypass or overflows from manholes, pump stations, or collection system.

Note: Initial SMP report to include map and description of each known bypass or overflow location.

Reporting - Shall be submitted monthly and include date, time, and period of each overflow or bypass.

II. SCHEDULE OF SAMPLING, MEASUREMENTS, AND ANALYSIS

A. The schedule of sampling, measurements, and analysis shall be that given as Table I.

I, Fred H. Dierker, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 78-44.

2. Does not include the following paragraphs of Part A:

   C3 and C4

3. Has been ordered by the Executive Officer on June 20, 1978 and becomes effective immediately.

4. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer.

FRED H. DIERKER
Executive Officer

Attachment:
Table I

TABLE I

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A	E-001			E-001-D			All O	All P & L Stations		C-1	C-2 & C-R	
TYPE OF SAMPLE	C-24	G	C-24	Cont	G	C-24	Cont			O	O		G
Flow Rate (mgd)	D		D										
BOD, 5-day, 20° C, or COD (mg/l & kg/day)	5/W		5/W										
Chlorine Residual & Dosage (mg/l & kg/day)					2H	OR	Cont						
Settleable Matter (ml/l-hr. & cu. ft./day)		D											
Total Suspended Matter (mg/l & kg/day)	5/W		5/W										
Oil & Grease (mg/l & kg/day)	(1) 2W		(1) 2W										
Coliform (Total) (MPN/100 ml) per req't					3/W								
Fish Toxicity, 96-hr. TL_{50} % Survival in undiluted waste						M							
Ammonia Nitrogen (mg/l & kg/day)													
Nitrate Nitrogen (mg/l & kg/day)													
Nitrite Nitrogen (mg/l & kg/day)													
Total Organic Nitrogen (mg/l & kg/day)													
Total Phosphate (mg/l & kg/day)													
Turbidity (Jackson Turbidity Units)			2/M										M
pH (units)		D											M
Dissolved Oxygen (mg/l and % Saturation)		D											M
Temperature (°C)		D											M
Apparent Color (color units)			2/M										M
Secchi Disc (inches)													M
Sulfides (if DO < 5.0 mg/l) Total & Dissolved (mg/l)													M
Arsenic (mg/l & kg/day)			(2) 3M										
Cadmium (mg/l & kg/day)			(2) 3M										
Chromium, Total (mg/l & kg/day)			(2) 3M										
Copper (mg/l & kg/day)			(2) 3M										
Cyanide (mg/l & kg/day)			(2) 3M										
Silver (mg/l & kg/day			(2) 3M										
Lead (mg/l & kg/day)			(2) 3M										

TABLE I (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A	E-001			E-001-D			All O	All P&L Stations		C-1	C-2 & C-R	
TYPE OF SAMPLE	C-24	G	C-24	Cont	G	C-24	Cont			O	O		G
Mercury (mg/l & kg/day)			3M (2)										
Nickel (mg/l & kg/day)			3M (2)										
Zinc (mg/l & kg/day)			3M (2)										
PHENOLIC COMPOUNDS (mg/l & kg/day)			3M (2)										
All Applicable Standard Observations		D						E		2/W	M		
Bottom Sediment Analyses and Observations	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)			3M										
Non-dissociated Ammonium Hydroxide as N (mg/l)													M

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
C-24 = composite sample - 24-hour
C-X = composite sample - X hours (used when discharge does not continue for 24-hour period)
Cont = continuous sampling
DI = depth-integrated sample
BS = bottom sediment sample
O = observation

TYPES OF STATIONS

I = intake and/or water supply stations
A = treatment facility influent stations
E = waste effluent stations
C = receiving water stations
P = treatment facilities perimeter stations
L = basin and/or pond levee stations
B = bottom sediment stations
O = overflows and bypasses

FREQUENCY OF SAMPLING

E = each occurence
H = once each hour
D = once each day
W = once each week
M = once each month
Y = once each year

2/H = twice per hour
2/W = 2 days per week
5/W = 5 days per week
2/M = 2 days per month
2/Y = once in March and once in September
Q = quarterly, once in March, June, Sept. and December

2H = every 2 hours
2D = every 2 days
2W = every 2 weeks
3M = every 3 months
Cont = continuous

FOOTNOTES FOR TABLE I

(1) Oil and grease sampling shall consist of 3 grab samples taken at 8-hour intervals during the sampling day, with each grab being collected in a glass container. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within an accuracy of plus or minus 5%. Each glass container used for sample collection or mixing shall be throughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite wastewater sample for extraction and analysis.

If the average of the results of the biweekly samples is greater than the 30-day average limitation, oil and grease shall be sampled weekly by the discharger until relieved in writing by the Regional Board staff.

(2) The sampling frequency shall be increased to monthly for the first six months following the connection of Mare Island Naval Shipyard waste flow to the Vallejo Sanitation and Flood Control District.